UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF PUERTO RICO

In re:	PROMESA Title III
THE FINANCIAL OVERSIGHT AND MANAGEMENT BOARD FOR PUERTO RICO,	
as representative of	No. 17 BK 3283-LTS
THE COMMONWEALTH OF PUERTO RICO, et al.,	(Jointly Administered)
Debtors.[1]	

In re:	PROMESA Title III
THE FINANCIAL OVERSIGHT AND MANAGEMENT BOARD FOR PUERTO RICO,	
as representative of	No. 17 BK 04780-LTS
PUERTO RICO ELECTRIC POWER AUTHORITY,	
Debtor.[2]	

NOTICE OF CORRESPONDENCE RECEIVED BY THE COURT

The Court has received and reviewed the attached correspondence, described below, from interested persons in the above-captioned cases. Although the Court cannot respond individually to all of those who have expressed their thoughts or concerns, the Court is deeply

[1] The Debtors in these Title III Cases, along with each Debtor's respective Title III case number and the last four (4) digits of each Debtor's federal tax identification number, as applicable, are the (i) Commonwealth of Puerto Rico (Bankruptcy Case No. 17 BK 3283-LTS) (Last Four Digits of Federal Tax ID: 3481); (ii) Puerto Rico Sales Tax Financing Corporation ("COFINA") (Bankruptcy Case No. 17 BK 3284-LTS) (Last Four Digits of Federal Tax ID: 8474); (iii) Puerto Rico Highways and Transportation Authority ("HTA") (Bankruptcy Case No. 17 BK 3567-LTS) (Last Four Digits of Federal Tax ID: 3808); and (iv) Employees Retirement System of the Government of the Commonwealth of Puerto Rico ("ERS") (Bankruptcy Case No. 17 BK 3566-LTS) (Last Four Digits of Federal Tax ID: 9686). (Title III case numbers are listed as Bankruptcy Case numbers due to software limitations).

[2] The last four (4) digits of PREPA's federal tax identification number are 3747.

mindful of the impact of the fiscal crisis on lives, institutions, and expectations, and of the importance of the issues that are raised in these unprecedented cases.

1. Letter dated July 9, 2017, from Racio Hernandez
2. Letter dated July 16, 2017, from Iliana Paz-Castellanos
3. Letter dated July 18, 2017, from Karen P. Wisner
4. Letter dated July 20, 2017, from Rama Asundi
5. Letter dated July 22, 2017, from Thomas and Gloria Hubber
6. Letter dated July 27, 2017, from Laurel Leslie
7. Email dated July 30, 2017, from Michele Sanchez
8. Letter dated July 30, 2017, from Efraín O'Neill-Carrillo et al.

Dated: August 2, 2017

[redacted]

Judge Laura Taylor Swain
San Juan, P.R.

Dear Judge Swain:

Me he tomado el atreuimiento de dirigirme a usted, pues he escuchado es una persona muy comprensiva.
Mi nombre es Rocio Hernández, soy viuda hace 15 años y vivo en la Calle del Parque 144 en Santurce, P.R. (no recibo correspondencia aqui)- Tel: (939) 397-1170. Tengo 78 años de edad (Usted nació, cuando yo tenía 18 años!)- Lo que estoy escribiendo no es para un Resumé de trabajo sino, un Resumé de una parte de mi vida, desde que empezo a tambalearse la economia en la Isla.
Por años nuestros ahorros han estado con UBS, y ya, usted se imagina el resto...= Se que mucho estan en la misma situación o peor! El cheque de intereses viene de menos cantidad en algunos meses, y ahora con lo de Cofina menos $608.00 men.

Cuando retuvieron ese dinero de Cofina no pensaron en las consecuencias que traería en la vida de cada individuo! — Qué pena!

Por cuánto tiempo podré soportar esto, ya que tengo unos gastos fijos como, agua, luz etc. más dos préstamos personales que cubrir en distintos bancos. Mi S.S. está comprometido con uno de ellos. Me despierto por la madrugada con un susto, a pensar en mis compromisos y no poder conciliar más el sueño (muy importante para una persona de mi edad) temo a una depresión severa, si no es que la tengo ya... siento que me consumo... Qué puedo esperar de todo esto!?

Atentamente

Rocío Hernández

Rocio Hernández

P.D.

Espero disculpe el atrevimiento de escribirle, pero, qué otra cosa podía hacer! - Bendiciones!

[redacted]

July 16, 2017

Hon. Laura Taylor Swain

United States District Court

500 Pearl Street,

New York, New York 10007-1312

Your Honor:

I am writing this letter as the best and only option to have my voice heard. My husband and I are some of the thousands seniors americans and puertorrican-americans who trusted the government of Puerto Rico by buying their bonds. We used our life savings to buy those bonds; although, many claims that we did it for the triple exemption and super high interest rates, that is not accurate, we own Cofina, Pension and PREPA bonds and we pay taxes on all of them and interest rates are between 5.50 and 6% and we purchased them at par.

The main reason most of us purchased those bonds was because they were supposed to be a much secured investment, they had a good rating (at the time we purchased them), they had a dedicated repayment source (Cofina and Pension) and Puerto Rico could not declare bankruptcy. On top of that, every institution in PR pushed to sell us those bonds. I am an educated buyer and I did not realize I was buying subordinated Cofina because that was not even mentioned; Senior and subordinate were sold alike.

Although Puerto Rico is not allowed to declare bankruptcy, none of the states are allowed either, Congress created PROMESA and gave the Commonwealth Government more protections not to pay their creditors. We are all for Puerto Rico, we want PR to succeed and all our people to have productive and successful lives in a growing economy, but that should not be done at the cost of the bondholders who are currently the only ones paying that hefty price. We do not receive any interest payment and will most probably get a big haircut of our investment. We cannot start again because most of us are senior citizens as are the pensioners who are being fully protected. Most of us worked for the private industry and do not have a pension, as do public employees. We created our own pension by saving every day from our salaries. It is my humble opinion that the United States and Puerto Rico will not benefit from applying recently approved laws retroactively to adversely affect a group of people and totally spare others.

Imagine what it is to lose your hard earned money, invested in supposedly safe muni bonds and wait every day to hear any news from the newspapers because you are too small to be notified or be part of any negotiation, while negotiation only takes place with hedge funds which paid a portion of what you paid and may have different interest to defend. I am not complaining, I am grateful that they can negotiate with the government and we may somehow benefit, but it is very difficult. Think of it, we are people who worked and saved, did everything by the book to secure our old years and we are back to square one.

We want to trust our justice system, and we want everybody to come up as winners, as much as possible, but what will get done in Puerto Rico will be a precedent for other states that have also been irresponsible, the muni market will suffer as well as thousands if not millions of seniors, bondholders across the country.

As I said before, I don't expect for us to win it all, I am just asking you to balance this equation, which currently, is very negative on our side.

Respectfully,

Iliana Paz-Castellanos

Karen P. Wisner
[redacted]

July 18, 2017

The Honorable Laura Taylor Swain
United States District Judge
Daniel Patrick Moynihan US Courthouse
500 Pearl Street
New York, NY 10007-1312

Dear Judge Swain,

My husband Martin G. Wisner and I are recently retired US citizens living in the state of Hawaii. We own a small amount (5,000 shares) of Puerto Rico bonds.

We are seriously concerned about the outcome of Puerto Rico's financial crisis and the effect on its people and our investment. Puerto Rico needs to develop a truly workable budget and we hope the US federal government steps in to honor payments of principal and interest on these bonds.

Thank you for taking your valuable time to read this. I know that what you are overseeing is a difficult and complex situation.

Aloha and Mahalo,

Karen P. Wisner

Karen P. Wisner

July 20, 2017
U.S. Dist. Court House
217C 500 Pearl Stait
N.Y. 10007-1312.

[redacted]

Ref: PR. Muni Bond issue Conflict
With Bond holders.

Dear Judge Laura Taylor,

The purpose of this letter is to bring to your attension the concerns of the PR bond holders as myself. My name is Rama Asundi. I worked in Puerto Rico for 30 long years earning a modest monthly income. I lived with my wife & 3 growing children, managed my spending frugaly and saved some funds each month. After accumulating my savings for some years I began investing in PR municipal bonds

[redacted]

after being advised by the brokerage that the PR government never defaulted in honoring their bonds when they matured. I invested all my savings in the different PR muni bonds to support my retirement years. Now I am 89 years of age in no condition to work, with limited resources to meet my living & medical expenses. The govt. had promised to pay the bond holders before any other expenses. The govt. must be asked to meet their obligation at least in a fair way. by strongly curtailing many of their expenditures, After working hard, and living frugaly & saving, and providing my funds for the ~~States~~ PR govt projects I should not be made to suffer in my late years. I fervently hope the decision you take will be fair to me & to others in similar condition. Thank you for reviewing my letter

Sincerely Yours
Rama Asrende.

[redacted]

July 27, 2017

Honorable Laura Taylor Swain
United States District Judge

Dear Judge Swain:

We are writing about the bankruptcy case of Puerto Rico. Thank you for agreeing to accept your charge of sorting out the claims of so many people.

We are writing as the holders of Puerto Rico general obligation bonds. When it issued the bonds, Puerto Rico promised to repay them. Puerto Rico must keep this promise

We are not bankers, stock brokers or hedge funds, but a couple who have invested to support our retirement. More importantly, we are hoping to fund a Special Needs trust for our disabled daughter.

We ask that you keep ordinary investors in Puerto Rico bonds in mind as you resolve the conflicting

claims of the many. We trust that you will hold Puerto Rico to its promises as best you can.

Thank you again for sitting on this important case — important for the people of Puerto Rico, but also for those, like us, who assisted Puerto Rico by investing our hard-earned income to support its government.

Very truly yours,

Thomas Haden

Gloria Haden

[redacted]

Date: July 27, 2017
To: The Honorable Judge Laura Taylor Swain
United States District Judge
From: Ms. Laurel Leslie
Re: Puerto Rican General Obligation Bonds

Dear Judge Swain:

It has come to my attention that you will be making a decision regarding Puerto Rican Bonds fiscal responsibility to people who purchased these bonds.

When Puerto Rico needed the money to manage their affairs, I entered into a contract with them to loan my money to help pay their obligations. Nowhere did I agree to give them this money. I expect Puerto Rico to live up to the contractual agreement they made when they agreed to make payments to me on this loan. Puerto Rico is a territory of the U.S. government and should not default on money owed to investors like myself.

I am a retired individual with limited income. I invested my earned money based on a trusted contract with clear outcomes. The Puerto Rican government should honor this contractual agreement. As an investor, I should not become a victim of incompetence within their government. They need to take responsibility for their debts! The loss of the money I have invested would be a hardship if they did not repay what they owe.

I hope you will consider individuals like me who have worked very hard to earn the money we loaned as general obligation bonds. I cannot default or refuse to pay my personal debts and Puerto Rico should not be allowed to do so either.

Thank you for your consideration of this matter.

Very truly yours,

Laurel Leslie

Ms. Laurel Leslie
[redacted]
[redacted]

Worried..
frutomima
to:
swaindprcorresp
07/21/2017 09:21 AM
Cc:
Michele Sanchez
Hide Details
From: frutomima <frutomima@gmail.com>

To: swaindprcorresp@nysd.uscourts.gov

Cc: Michele Sanchez <frutomima@gmail.com>

Good morning, I am a 65yr old lady born in NY . Living in Puerto Rico since 1965..I thank you for your service and I hope all is well with you and your family. Both of my children have moved to the mainland looking for stability and jobs leaving me well , but alone with my husband i have grandchildren who will never know me except for a few minutes on the phone..enough about me, I am really upset about the way the current government has not been drastically monitored as to salaries, why do we have to have so many politicians. Why can't there be a top salary of maybe 30,000 a yr.? Why are they first looking at cutting pensions and cutting hours? I know a lot of pensions are high and those should be cut not the lower pensions .. why do our x governors use police escorts funded by our taxes? There are so many ways to cut the budget from top to bottom! I am sorry to take your time, I only wish things could get better so my kids can come back home, get a job and be a family again..

Sent from my Galaxy Tab® A

July 30, 2017
Mayagüez, PR

Hon. Laura Taylor Swain
United States District Judge
United States Courthouse
500 Pearl St.
New York, NY 10007-1312

"…to accept responsibility in making decisions consistent with the safety, health, and welfare of the public, and to disclose promptly factors that might endanger the public or the environment…"[1]

The Honorable Judge Taylor Swain:

We, the signatories of this letter, are professors and researchers of electric power systems and power electronics[2] who have accepted "a personal obligation to our profession, its members and the communities we serve"[3]. We write to present our collective and personal vision of a sustainable energy future for Puerto Rico; hoping this strongly supported input will help in your decision-making process as you preside over Puerto Rico's case pursuant to PROMESA Title III.

We propose distributed rooftop photovoltaic systems, solar communities, and microgrids, combined with effective demand response programs and energy storage, to transform the electric infrastructure in Puerto Rico. Keeping the same type of electric system and simply transferring it from public to private hands will not resolve our electricity challenges. Until affordable storage arrives, we will need traditional generation but these fossil fuel-based generators must prioritize enabling the maximum use of renewable energy. Replacement of fossil fuel-based generation must be made within existing power plants, in sites that are already environmentally impacted, and where Puerto Rico has leverage to negotiate better agreements with private investors.

Our electric infrastructure is essential for the socio-economic development of Puerto Rico. We currently own a traditional power system; based on large generating plants connected to clients through transmission and distribution networks. This centralized generation model requires large financial investments. Years of deferred maintenance and minimum investment on the transmission and distribution systems have resulted in worse than average electrical losses and severe blackouts when cascading failures occur. The same lack of investment and vision towards a new type of electric system has saddled us with old, and sometimes new, but polluting power plants. In 2016, the Puerto Rico Energy Commission approved a modified integrated resource plan (IRP), and ordered the utility (PREPA) to improve revenue and load estimates; to implement energy efficiency, demand response and energy storage; and to enhance emissions monitoring. However, the modified IRP contemplates H-technology generation, units that are too large for the relative size of our system. The replacement generation must be agile and smaller than the units to be replaced in order to maximize renewable energy use.

Puerto Rico requires a new electric power infrastructure that provides electric energy at reasonable cost, with greater efficiency, and with minimum impact on our environment. Renewable energy is economically competitive in Puerto Rico. Rooftop photovoltaic (PV) systems constitute a

[1] *Code of Ethics of the IEEE* (Institute of Electrical and Electronics Engineers), http://www.ieee.org/about/corporate/governance/p7-8.html
[2] See Attachment 1.
[3] *Code of Ethics of the IEEE*

better alternative than utility scale solar installations, which require large amounts of land, and are not cheaper than rooftop PV since all our power purchase agreements (PPA) for utility scale solar have resulted in very expensive contracts[4] with escalating costs during the life of the project.

PROMESA, and the majority of the Financial Oversight and Management Board members, propose to privatize the power generation in Puerto Rico to achieve greater efficiency and lower electricity prices[5]. We contend that it is not enough to retain the same type of system and simply to transfer it from public to private hands. With declining energy demand, the construction of large, new gas power plants, even by private investors, would tie the Puerto Rico electric grid and economy to 40 years of continued fossil fuel dominance. Thus, we propose and are working to develop a citizen-owned, thus private, electric power system based on rooftop solar PV. This approach is the best and most forward-thinking electric power system: a reliable alternative that will take full advantage of local resources and innovative market-based opportunities. Our previous work (e.g., renewable energy, streamlined rooftop PV processes, maximizing the benefits from energy use), and our current work on microgrids and solar communities support our vision [6].

A rooftop solar-based electrical grid could leapfrog a centralized, hierarchical system to a distributed prosumer[7] transactive energy market in which public policy facilitates citizens' investments in the electric system mainly through rooftop solar, distributed energy storage and smart meter technology. There are precedents to our proposed undertaking, for example: distributed energy resources are being strongly pursued in New York[8]; and Hawaii, having weaker electric systems than Puerto Rico, has a goal of 100% clean energy by 2045. We seek the integration of renewable energy, conservation strategies, and efficiency measures in solar communities to harness market forces in a transactive energy framework for the benefit of consumers and investors[9]. Puerto Rico will benefit from a reduced dependence on fossil fuels, the emergence of electricity markets (e.g., transactive energy), an improved environmental health and local socio-economic development.

An analogy may help explain this alternative future: personal communications and connectivity have changed dramatically in two decades,[10] unleashing vast economic opportunities (e.g., the Internet of Things) and obliterating or seriously changing many well-established industries in the process (video rental, music sales). Electric power generation and consumption are undergoing a similar revolution. The cost of a clean, silent, inconspicuous, rooftop solar PV residential generation system continues to drop with a U.S. national average of $3.16 per installed Watt. In Puerto Rico, as in Florida and Colorado, the average is between $3 and $2.80 per installed Watt. At $3 per installed Watt, the average solar rooftop electricity costs, without storage (with net metering) in Puerto Rico is $0.11 per kWh[11]. In recent months the cost from the grid has been around $0.20 per kWh, with a 98% dependence on fossil fuels (oil, natural gas or coal-based generation). An increasing number of PREPA clients are privatizing their electric energy needs: individual families and businesses are buying their own PV systems or buying energy from private companies that install PV systems on the clients' rooftops. Through Act 133-2016, low-income communities will be able to develop their own private community solar systems.

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[4] The cost range used for actual utility scale solar in the IRP was $0.178/kWh to $0.197/kWh (Table 4-2, page 4-3, PREPA's IRP, vol. I)
[5] See Wall Street Journal article - https://www.wsj.com/articles/puerto-ricos-broken-promesa-1499638891
[6] See Attachments 2, 3 and 4
[7] A *prosumer* is both a *pro*ducer of electricity and a con*sumer*.
[8] "Reforming the Energy Vision," http://www3.dps.ny.gov/W/PSCWeb.nsf/All/CC4F2EFA3A23551585257DEA007DCFE2?OpenDocument
[9] Through projects funded by the U.S. National Science Foundation and the U.S. Department of Energy.
[10] The first concepts that eventually led to the invention of the smartphone date back to the 1970s. The first smartphone (a Palm PDA) with internet connectivity capabilities was released in 1999. Apple's iPhone was introduced in 2007.
[11] *Improved Permitting and Interconnection Processes for Rooftop PV Systems in Puerto Rico*, based on a DOE SunShot project report, 2013.

The "smartphone equivalent," the game changer that will multiply private rooftop PV systems, will be the integration of affordable energy storage, smart controls and efficient communications. A transparent integration of these components, most probably accessible through a smart phone, will unleash energy markets at the distribution level (e.g., transactive energy). *Lazard*, a leading financial advisory and asset management firm, recently published a study indicating that industry participants expect storage costs to decrease significantly in the next five years. The cost decline is driven by the increasing use of renewable energy, government policies promoting energy storage and the unfulfilled client expectations from an aging power grid. Energy storage will be key for the utility to guarantee a stable and reliable system that is able to manage renewable energy variations.

Until affordable storage materializes itself, traditional generation will be needed; but these fossil fuel-based generators must prioritize enabling the maximum use of renewable energy. Replacement of fossil fuel-based generation must be made within existing power plants, in sites that are already environmentally impacted and where Puerto Rico has leverage to negotiate better agreements with private investors. This replacement generation must be agile and smaller than the units it will replace. We cannot afford traditional power purchase agreements with guaranteed energy sales. With declining electricity demand and cheaper rooftop PV, investors considering large, private power plants would face a high-risk scenario: financing expensive facilities with no warranty of long-term sales to provide the payback and rates of returns they are used to from Puerto Rico. The business model of any organization that seeks to be part of the electric energy sector in Puerto Rico must go beyond merely selling electricity; it must provide competitive energy services in support of an increased use of local resources: conservation, efficiency and renewable energy.

We expect you will give this vision an opportunity to come to fruition.

Sincerely,

Dr. Erick E. Aponte

Dr. Marcel Castro Sitiriche

Dr. Agustín A. Irizarry-Rivera

Dr. Efraín O'Neill-Carrillo

Dr. Lionel R. Orama-Exclusa

Dr. Eduardo I. Ortiz-Rivera

Dr. Alberto Ramírez-Orquín

c. The Financial Oversight and Management Board, News Media

Attachments (4)

ATTACHMENT 1: BRIEF BACKGROUND OF SIGNATORIES

Name	Degree/University	Research & Teaching Areas
Erick E. Aponte	DEng (2006) Rensselaer Polytechnic Institute	Power system analysis, power electronics.
Marcel Castro Sitiriche	PhD (2007) Howard University	Appropriate technology, native dc power, responsible wellbeing, rural electrification.
Agustín A. Irizarry-Rivera	PhD (1996) Iowa State University	Power systems dynamics and operation, renewable energy sources.
Efraín O'Neill-Carrillo	PhD (1999) Arizona State University	Sustainable energy, distributed generation, energy policy, power quality, power distribution systems, engineering education, social and ethical implications of engineering and technology.
Lionel R. Orama-Exclusa	DEng (1997) Rensselaer Polytechnic Institute	Power system transients and protection, switching devices, switchgear technology, arc discharges in vacuum and gases, EMTP modeling of power devices.
Eduardo I. Ortiz-Rivera	PhD (2006) Michigan State University	Photovoltaic systems, power electronics, mathematical modeling of renewable energy systems, aerospace & unmanned systems, nonlinear control, engineering education.
Alberto Ramírez-Orquín	PhD (2002) University of Texas, Arlington.	Power system operation and control, power systems dynamics and stability, power system transients and protection, deregulation, power markets, congestion management.

ATTACHMENT 2: SELECTED PUBLICATIONS FROM THE LAST TEN YEARS (IN REVERSE CHRONOLOGICAL ORDER)

Books and Book Chapters

E. O'Neill-Carrillo, A. Irizarry, E. Jimenez, "Puerto Rico," *World Small Hydropower Development*, Report from the United Nations Industrial Development Organization and the International Centre on Small Hydro Power, 2016.

E. O'Neill-Carrillo, A. Figueroa, A. Irizarry. *Improved Permitting and Interconnection Processes for Rooftop PV Systems in Puerto Rico*, Book based on final Sunshot project report to the U.S. Departmen of Energy, 145 pages, 2013.

E. O'Neill-Carrillo. *Una Nueva AEE: Energía Eléctrica para la Sociedad Puertorriqueña del Siglo XXI*, Dec. 2010 (rev. 2012), available at http://iteas.uprm.edu/docs/Nueva_AEE_2012.pdf

A.A. Irizarry-Rivera, M. Rodríguez-Martínez, B. Vélez, M. Vélez-Reyes, A.R. Ramírez-Orquín, E. O'Neill-Carrillo, and J.R. Cedeño, "Intelligent Power Routers: Distributed Coordination for Electric Energy Processing Networks." Chapter in L. Mili and J. Momoh. Eds., *Electric Power Networks Efficiency and Security,* John Wiley, 2010.

E. O'Neill-Carrillo, Editor. *Energía Sostenible 2009: Antología de Lecturas del Instituto Tropical de Energía Ambiente y Sociedad (ITEAS)*, vol. 2, 2010, available at http://iteas.uprm.edu/docs/antologia_ITEAS_2009.pdf

A. A. Irizarry Rivera, J. A. Colucci-Ríos, E. O'Neill-Carrillo *Achievable Renewable Energy Targets For Puerto Rico's Renewable Energy Portfolio Standard,* Puerto Rico State Energy Office, 2009, 300 pages, http://www.uprm.edu/aret

J. Colucci -Ríos, E. O'Neill-Carrillo, A. Irizarry Rivera, "Renewable Energy in the Caribbean: A Case Study from Puerto Rico," Chapter in *Environmental Management, Sustainable Development and Human Health*, CRC Press, 2009.

Peer-reviewed Publications

E. O'Neill-Carrillo, I. Jordán, N. López. "Electric Transformations and Local Socio-Economic Development through Distributed Energy Options," Submitted for review, 2017.

E. O'Neill-Carrillo, R. Santiago, Z. Méndez, H. Vega, J. Mussa, J. Rentas. "Capstone Design Projects as Foundation for a Solar Community," Accepted to the *47th ASEE/IEEE Frontiers in Education Conference*, Indianapolis, IN. October 18 - 21, 2017.

N. López, A.A. Irizarry-Rivera, E. O'Neill-Carrillo, T. Key, A. Schneider. "Industry-University Collaboration in Workforce Development: Results from a Short Course on IEEE Standard 762," Accepted to the *47th ASEE/IEEE Frontiers in Education Conference*, Indianapolis, IN. October 18 - 21, 2017.

R. Darbali-Zamora, E. I. Ortiz-Rivera. "A State Space Average Model for Dynamic Microgrid Based Space Station Simulation" *44th IEEE Photovoltaic Specialists Conference*, Washington DC, June 2017.

D. Merced, R. Darbali-Zamora, E. I. Ortiz-Rivera. "Passivity Based Controller for Photovoltaic Modules Using ZETA Converter" *44th IEEE Photovoltaic Specialists Conference*, Washington DC, June 2017.

R. Darbali-Zamora, N. Cobo-Yepes, J. E. Salazar-Duque, E. I. Ortiz-Rivera, A. A. Rincon-Charris. "Buck Converter and SEPIC Based Electronics Power Supply Design with MPPT and Voltage Regulation for Small Satellite Applications" *44th IEEE Photovoltaic Specialists Conference*, Washington DC, June 2017.

I. Jordán, E. O'Neill-Carrillo, N. López. "Towards a Zero Net Energy Community Microgrid," *IEEE Conference on Technologies for Sustainability*, Phoenix, AZ. Nov 12-14 2016.

M. Rodríguez-Martínez, E. O'Neill-Carrillo, M. Pérez, F. Andrade, W. Rivera, A. Irizarry-Rivera, R. Rodriguez, C. Ortiz, E. Lugo, "A Case for Open Access Smart Grids (OASIS)," *IEEE Conference on Technologies for Sustainability*, Phoenix, AZ. Nov 12-14 2016

E. I. Ortiz-Rivera, M. Lugo, J. Pabon de Leon, Y. Diaz. "Voltage Control for a Thermoelectric Generator Using a KY-Converter," *2016 IEEE ANDESCON Andean Council International Conference*; Arequipa, Perú, October 19 - 21, 2016

R. Darbali-Zamora, E. I. Ortiz-Rivera, A. Rincon-Charris. "Analytical Photovoltaic Mathematical Model with Varying Inclination Angle for Satellite Applications," *2016 IEEE ANDESCON Andean Council International Conference*; Arequipa, Perú, Oct. 19 - 21, 2016.

R. Darbali-Zamora, E. I. Ortiz-Rivera. "Optimal Duty Ratio Maximum Power Point Tracking Technique Using the SEPIC Topology for Photovoltaic Systems Applications," *2016 IEEE ANDESCON Andean Council International Conference*; Arequipa, Perú, October 19 - 21, 2016.

J. E. Salazar Duque, E. I. Ortiz-Rivera, J. Gonzalez-Llorente. "A Fuzzy-Logic-Controller Based on Output Reference Tracking Applied to Photovoltaic Systems Using a SEPIC Converter," *2016 IEEE ANDESCON Andean Council International Conference*.; Arequipa, Perú Oct. 19 - 21, 2016.

J. E. Salazar-Duque, E. I. Ortiz-Rivera, J. Gonzalez-Llorente. "Modified Perturb and Observe MPPT Algorithm Based on a Narrow Set of Initial Conditions," *2016 IEEE ANDESCON Andean Council International Conference*; Arequipa, Perú, October 19 - 21, 2016.

G. Guerrero-Cabarcas, E. I. Ortiz-Rivera, J. Gonzalez-Llorente. "Nonlinear Control of Cuk Converter in Cascade with PV Module," *2016 IEEE ANDESCON Andean Council International Conference*; Arequipa, Perú, October 19 - 21, 2016.

A. Aponte-Lugo, F. Matos-Ortiz, E. Gonzalez-Figueroa, E. I. Ortiz-Rivera. "A Solar Simulation Research with an Academic Learning Experience"; 2016 IEEE ANDESCON Andean Council International Conference; Arequipa, Perú, Oct. 19 - 21, 2016

C. Lebrón, F. Andrade, E. O'Neill-Carrillo, A. Irizarry. "An Intelligent Battery Management System for Home Microgrids," IEEE PES Innovative Smart Grid Technologies Conference, September 2016, Minneapolis, MN.

E. O'Neill-Carrillo, A.A. Irizarry-Rivera, Cecilio Ortiz, Marla Pérez-Lugo. "The Role of Engineers as Policy Entrepreneurs toward Energy Transformations," Proceedings of the ASEE 123rd Annual Conference, New Orleans, June 2016.

J. Gonzalez-Llorente, A. Rambal-Vecino, L. Garcia-Rodriguez, J. C. Balda, E. I. Ortiz-Rivera. "Simple and Efficient Low Power Photovoltaic Emulator for Evaluation of Power Conditioning Systems" 31st Annual IEEE Applied Power Electronics Conference & Exposition, Mar. 2016.

R. Darvali-Zamora, E. I. Ortiz-Rivera, A. A. Rincon-Charris. "The Puerto Rico CubeSat project to attract STEM students in to the area of aerospace engineering" 2015 IEEE Frontiers in Education Conference, El Paso, TX.

G. Lopez, D. Ramos, K. Rivera, K. del Valle, E. I. Ortiz-Rivera. "Micromouse: An Autonomous Robotic Vehicle Interdisciplinary Attraction to Education and Research" 2015 IEEE Frontiers in Education Conference, El Paso, TX.

E. O'Neill-Carrillo, A.A. Irizarry-Rivera, C. Pomales, E. Contreras. "A Novel, International Masters Program to Address the Sustainable Energy Challenge," *Proceedings of the 45th ASEE/IEEE Frontiers in Education Conference*, El Paso, TX. October 21 - 24, 2015.

A. Rincón, R. Salgado, R. Darbali, E. Ortiz, E. Romero. "The Puerto Rico CubeSat: A Project to Attract STEAM Students into Aerospace Engineering" 29th Annual AIAA/USU Conference on Small Satellite, SSC15-P-122015, Utah University, August 2015

R. Darvali-Zamora, D. Merced-Cirino, J. Rivera-Alamo, E. I. Ortiz-Rivera, A. A. Rincon-Charris "Design and Thermal Testing of a Power Supply Prototype for the Space Plasma Ionic Charge Analyzer (SPICA) CubeSat" 42nd IEEE Photovoltaic Specialists Conference, New Orleans. June 14-19, 2015.

R. Darvali, C. J. Gomez-Mendez, E. I. Ortiz-Rivera, L. He, J. Wang. "Solar Irradiance Prediction Model based on a Statistical Approach for Microgrid Application" 42nd IEEE Photovoltaic Specialists Conference, New Orleans. June 14-19, 2015.

J. E. Salazar-Duque, E. I. Ortiz-Rivera, J. Gonzalez-Llorente. "Analysis and non-linear control of a SEPIC dc-dc converter in photovoltaic systems" 2015 IEEE Workshop on Power Electronics and Power Quality Applications (PEPQA), June 2-4, 2015; Bogotá, Colombia.

Castro-Sitiriche, Marcel J., Jonathan Ozik; "Rural Electrification Pathways to Wellbeing", Proceedings of the 6th International Conference of Appropriate Technology: Knowledge and Technology Transfer Session, Nairobi, Kenya, pages 54-63, November 2014.

Darbali-Zamora, Rachid; Merced-Cirino, Daniel; Diaz-Castillo, Andres J.; Ortiz-Rivera, Eduardo I.; "Single Phase Induction Motor Alternate Start-up and Speed Control Method for Small Wind Turbine Applications" *4th International Conference on Renewable Energy Research and Applications (ICRERA*), October 19-22, 2014; Milwaukee, WI.

Molina, Carlos; Belfort, Reynaldo; Chacon, Oscar; Rivera, Luis; Pol, Rafael; Ramos, Daniel; Ortiz-Rivera, Eduardo I.; "The use of Unmanned Aerial Vehicles for an Interdisciplinary Undergraduate Education: Solving Quadrotors Limitations" *2014 IEEE Frontiers in Education Conf.*, October 22-25 2014; Madrid, Spain.

Navarro, Daniel; Melendez, Jean C.; Berrios, Kidany; Ortiz-Rivera, Eduardo I; Arzuaga, E.; "Using Cybersecurity as an Engineering Education Approach on Computer Engineering to Learn about Smart Grid Technologies and the Next Generation of Electric Power Systems" *2014 IEEE Frontiers in Education Conference*, October 22-25 2014; Madrid, Spain.

Delgado-Vazquez, Lorena; Rodriguez, Vivian; Feliciano-Cruz, L. I.; Rivera, L.; del Valle-Morales, Ashley; Ortiz-Rivera, Eduardo I.; "Integrated educational research and technical experiences to attract females in the area of energy systems: The UPRM Experience" *2014 IEEE Frontiers in Education Conference*, October 22-25 2014; Madrid, Spain.

Darvali-Zamora, Rachid; Merced-Cirino, Daniel A.; Gonzalez-Ortiz, Cesar S.; Ortiz-Rivera, Eduardo I.; "An Electric Power Supply Design for the Space Plasma Ionic Charge Analyzer (SPICA) CubeSat", *2014 IEEE Photovoltaic Specialists Conf.*, June 8-13, 2014;Denver, CO.

Perez-Santiago, Anthony; Ortiz-Dejesus, Randy; Ortiz-Rivera, E.I.; "HOMER: A Valuable Tool to Facilitate the Financing Process of Photovoltaic Systems in Puerto Rico", *2014 IEEE Photovoltaic Specialists Conference*, June 8-13, 2014; Denver, CO.

Papadopoulos, Christopher; Frey, William; Castro-Sitiriche, Marcel; Rodríguez, Joan; Santiago, Jeffrey; Medina, Tyrone; Maldonado, Ricardo; Rivera-Vélez, Cristina; Chacón-Hurtado, Davis; Acevedo, Pablo J. (2014) "Sponsoring Research in Appropriate Technology", *Proceedings of the ASEE Annual Conference and Exposition*, Indianapolis, IN, June 2014.

Lugo-Cordero, H.M.; Guha, R.K.; Ortiz-Rivera, Eduardo I.; "An Adaptive Cognition System for Smart Grids with Context Awareness and Fault Tolerance" *IEEE Transactions on Smart Grid*, Issue: 99, Pages 1249-1256, May 2014

Gonzalez-Llorente, J.; Hurtado, Ronald; Sánchez-Sanjuán Sergio A.; Ortiz-Rivera, E.I.; "Evaluation of Techniques for Power Regulation on Nanosatellites" *10th European Space Power Conference*, April 13-14, 2014; Noordwijkerhout, The Netherlands, Vol. SP-719

Salazar-Llinas, Andres; Ortiz-Rivera, Eduardo; Gonzalez-Llorente, Jesus; "Dynamic Power Control of a PV-Fuel Cell Hybrid Energy System Used in DC Motors Applications" *6th Annual IEEE Green Technologies Conference (GREENTECH)*, April 3-4, 2014, Corpus Christi TX.

E. O'Neill-Carrillo, L.O. Jiménez-Rodríguez, W.J. Frey, A. Irizarry-Rivera. "La Responsabilidad Social en la Transformación de la Infraestructura Eléctrica de Puerto Rico," ETHOS, Vol. VII, Revista del Centro para el Desarrollo del Pensamiento Ético, Oficina de Ética Gubernamental de Puerto Rico, 2014.

Castro-Sitiriche, Marcel J., Mandoye Ndoye; "On the Links Between Sustainable Wellbeing and Electric Energy Consumption", African Journal of Science, Technology, Innovation and Development (AJSTID), Taylor & Francis, 2013.

Castro-Sitiriche, Marcel J., Luis Jiménez-Rodríguez; (2014) "Responsible Wellbeing and Energy Threshold". ETHOS Gubernamental: Revista del Centro para el Desarrollo del Pensamiento Ético, Oficina de Ética Gubernamental, No. VII, San Juan, Puerto Rico, pp. 64-126, June 2014.

Gonzalez-Llorente, J.; Ortiz-Rivera, Eduardo I.; "Comparison of Maximum Power Point Techniques in Electrical Power Systems of CubeSats" *27th Annual AIAA/USU Conference on Small Satellites*, Logan, Utah, August 10-15, 2013

Castro-Sitiriche, Marcel J., Gerson Beauchamp-Báez, Luis Jiménez-Rodríguez; "Solar Microgrids and Energy Poverty: Conceptual Framework for Sustainable Wellbeing and Technology Justice Assessment". *Proceedings of the 12th World Wind Energy Conference & Renewable Energy Exhibition* (WWEC), La Habana, Cuba, June 2013.

Castro-Sitiriche, Marcel J., Mandoye Ndoye; "Subjective Wellbeing and Sustainability: A Data Driven Look at Global Electric Energy Consumption", *Proceedings of the 5th International Conference of Appropriate Technology*, Pretoria, South Africa, pages 141-148, November 2012.

J. Colucci, M. Fontalvo, E. O'Neill-Carrillo, "CHEM E Sustainable Energy Demos, Workshops, Town Hall Meetings and Other Stakeholder Engagement: Working the Pipeline," *Proceedings of the 2012 ASEE Annual Conference*, (Best ECCD Paper Award), San Antonio, TX, June 2012.

Frey, William; Papadopoulos, Christopher; Castro-Sitiriche, Marcel; Zevallos, Fátima; Echevaría, Denisse; "On Integrating Appropriate Technology Responsive to Community Capabilities: A Case Study from Haiti", *Proceedings of the ASEE Annual Conference and Exposition*, San Antonio, TX, June 2012.

Amador, A. ; Canals, M. ; Guerrero, G. ; Cruz, J. ; Ortiz, E. "Development of novel instrumented Lagrangian drifters to probe the internal structure of breaking surface waves" *2012 IEEE Oceans*, Hampton Roads, VA, USA

Perez-Santiago, Anthony; Reyes, Miguel; Ortiz-Rivera, E.I.; "Work in Progress-HOMER: An Educational Tool to Learn About the Design of Renewable Energy Systems at the Undergraduate Level" *2012 IEEE Frontiers in Education Conference*, Seattle, WA.

Ortiz-Rivera, E.I.; Estela, Angelina; Romero, Carlos; Valentín, Jesús A.; "The Use of UAVS in USA'S Security by an Engineering Education Approach" *2012 IEEE Conference on Technologies for Homeland Security*, Greater Boston, MA.

Méndez-Gómez, Nelson M.; Bousoño, Orlando; Castañeyra, Ricardo; Ortiz-Rivera, Eduardo I.; "Development of a Low-Cost Induction Motor Drive System Using a PVM, Boost Converter and Three-Phase Inverter*" 2012 IEEE Photovoltaic Specialists Conference*, Austin, TX.

Feliciano-Cruz, L.I. ; Ortiz-Rivera, E.I. "Biharmonic spline interpolation for solar radiation mapping using Puerto Rico as a case of study" *2012 IEEE Photovoltaic Specialists Conf.*, Austin, TX, Page(s): 2,913 – 2,915

Ortiz-Rivera, E. I.; Cruz, Joel; Martinez-Mitjans, Luis R.; "Design of a Low-Cost Irradiance Meter Using a Photovoltaic Panel" *2012 IEEE Photovoltaic Specialists Conf.*, Austin, TX.

Ortiz-Rivera, Eduardo I., "Approximation of a Photovoltaic Module Model Using Fractional and Integral Polynomials" *2012 IEEE Photovoltaic Specialists Conf.*, Austin, TX.

Castro-Sitiriche, Marcel; Papadopoulos, Christopher; Frey, William; Huyke, Hector. "Sustainable Wellbeing Education in Engineering," *2012 IEEE International Symposium on Sustainable Systems and Technology (ISSST)*, 16-18 May 2012.

E. O'Neill-Carrillo, R. Zamot, M. Hernandez, A. Irizarry, "Beyond Traditional Power Systems: Energy Externalities, Ethics and Society," *Proceedings of the IEEE 2012 International Symposium on Sustainable Systems and Technology (ISSST)*, May 2012, Boston, MA

Verharen, C., J. Tharakan, G. Middendorf, M. Castro-Sitiriche, and G. Kadoda; "Introducing Survival Ethics into Engineering Education and Practice", *Science and Engineering Ethics, Springer*, Online First™, 8 December 2011.

E. O'Neill-Carrillo, J. Colucci-Rios, A. Irizarry-Rivera, "Integrating Sustainable Energy in Engineering Education" *Proceedings of the IASTED International Conference on Power and Energy Systems*, November 6-9, 2011, Pittsburgh, PA.

Lugo-Cordero, Hector M.; Fuentes-Rivera, Abigail; Guha, Ratan K.; Ortiz-Rivera, Eduardo I.;"A cognitive approach to load balancing for Green Houses" *2011 IEEE Power and Energy Society General Meeting,* Publication Year: 2011

Otero, Ruben; Santiago, Juan; Cruz, Joel; Lopez, Victor; Ortiz-Rivera, Eduardo I.; "Three Phase Induction Motor Drive Using Flyback Converter and PWM Inverter Fed from a Single Photovoltaic Panel" *2011 Power and Energy Society General Meeting*, Detroit, MI

Santiago, Juan; Gonzalez, Pedro; Garcia, Sergio; Ortiz-Rivera, Eduardo I.; "Design of an Observer and Speed Controller for a DC Motor Fed by Fuel Cells and DC to DC Converters" *2011 Power and Energy Society General Meeting*, Detroit, MI

Ortiz, Eliud; Maldonado, Ricardo; O'Neill, Harry, Ortiz-Rivera, Eduardo I.; "Proposed System Model and Simulation for Three Phase Induction Motor Operation with Single PV Panel" *2011 Power and Energy Society General Meeting*, Detroit, MI

Ortiz-Rivera, Eduardo I.; Cosme, Antonio; Alvarez, Jaime; "Compact Fluorescent Lamps, an Anticipatory Mind to Mercury" IEEE Potentials-Magazine Jan./February 2011 Vol.30 No.1

Balaguer, Irvin; Ortiz-Rivera, Eduardo I.; "Survey of Distributed Generation Islanding Detection Methods" IEEE Latin America Transactions, October 2010 vol. 8 No. 5

Garcia, Sergio; Pabon, Jose; Diaz, Yancy; Ortiz-Rivera, Eduardo I.; "An Integrated Undergraduate Research Experience in Control, Power Electronics, and Design using a Micromouse" 2010 Frontiers in Education Conference, Washington DC

Mendez, Edgardo; Serrano Guillermo; Ortiz-Rivera, Eduardo I.; "A Monolithic Integrated Solar Energy Harvesting System", 2010 IEEE Photovoltaic Specialists Conf., Hawaii, June 2010

E. O'Neill-Carrillo, C. Ortiz-García, M. Pérez, I. Baigés, S. Minos, "Experiences with Stakeholder Engagement in Transitioning to an Increased Use of Renewable Energy Systems," *Proceedings of the IEEE International Symposium on Sustainable Systems and Technology*, Washington, DC, May 2010.

R. Martínez-Cid, E. O'Neill-Carrillo, "Sustainable Microgrids for Isolated Systems," *Proceedings of the IEEE/PES Transmission and Distribution Conference*, New Orleans, LA, April 2010.

Díaz-Mercado, Yancy; García-Vergara, Sergio; Pabón-De León, José; Ortíz-Rivera, Eduardo I.; "Maximum Power Control Based on Matching D.C. Motor Dynamics and Fuel Cell Dynamic Behavior" *Proc. 2010 CPES Annual Conf.,* D2.9, Blacksburg, VA, April 11-13, 2010

Cabrera, Rafmag; Merced, Emmanuelle J.; Suarez, Ramon; Santiago, Jorge; Ortiz-Rivera, Eduardo I. "Self-sustainable Voltage Regulator for Photovoltaic Systems using Optimal Control Algorithm" *Proceedings 2010 CPES Annual Conf.*, D2.10, Blacksburg, VA, April 11-13, 2010

Soltero, Daniel E.; Francisco, Luis S.; Ortiz-Rivera, Eduardo I.; "Optimal Control for Buck Converter with PV Module" *Proceedings 2010 CPES Annual Conference*, D2.10, Blacksburg, VA, April 11-13, 2010

Jimenez-Brea, Emil A.; Ortiz-Rivera, Eduardo I.; Salazar, Andres; "Simple Photovoltaic Solar Cell Dynamic Sliding Mode Controlled Maximum Power Point Tracker for Battery Charging Applications" 23rd *IEEE Applied Power Electronics Conference and Exposition*, Palms Springs, CA, February 21-25, 2010 (IEEE Award: Best APEC Presentation on Renewable Energy)

Ortiz-Rivera, Eduardo I. Salazar, Andres; Gonzalez, Jesús; "A Mathematical Model for Online Electrical Characterization of Thermoelectric Generators Using the P-I Curves at Different Temperatures" 23rd *IEEE Applied Power Electronics Conference and Exposition*, Palms Springs, CA, February 21-25, 2010

Jimenez-Brea, Emil A.; Salazar, Andres; Ortiz-Rivera, Eduardo I.; Gonzalez, Jesús; "A Maximum Power Point Tracker Implementation for Photovoltaic Cells Using Dynamic Optimal Voltage Tracking" *23rd IEEE Applied Power Electronics Conference and Exp.*, Palms Springs, CA, February 21-25, 2010

Gonzalez, Jesús; Ortiz-Rivera, Eduardo I.; Salazar, Andres; Jimenez-Brea, Emil A.; "Analyzing the Optimal Matching of DC Motors to Photovoltaic Modules via DC-DC Converters" *23rd IEEE Applied Power Electronics Conf. and Exp.*, Palms Springs, CA, February 21-25, 2010

Ortiz-Rivera, Eduardo I.; Salazar, Andres C.; Velez, José; "An Enriched Undergraduate Research Experience based on the Simulation, Experiments, and Theory of Fuel Cells" *2009 Frontiers in Education Conference*, San Antonio, TX, October 18-21, 2009 (Nomination for 2009 IEEE FIE Young Faculty Award)

Ortiz-Rivera, Eduardo I.; Castro, Marcel; "Integration of Hands on Laboratory Experience of Power Electronics and Renewable Energy Applications: Work in Progress" *2009 Frontiers in Education Conference*, San Antonio, TX, October 18-21, 2009

Ortiz-Rivera, Eduardo I.; Gonzalez, Jesús; Salazar, Andres C.; "Bringing Renewable Energy to the Electrical Engineering Undergraduate Education & Research at UPRM" *2009 Frontiers in Education Conference*, San Antonio, TX, October 18-21, 2009

Ortiz-Rivera, Eduardo I.; Feliciano, Luisa; "Performance Evaluation and Simulation of a Solar Thermal Power Plant" *2009 IEEE Energy Conversion Congress and Exposition* (Former IEEE PESC Conf.) San Jose, CA, USA, Sept. 20-24, 2009 (IEEE IAS Myron Sucker Award!)

H. P. Ladner-García, E. O'Neill-Carrillo, "The Potential of Photovoltaic Generation in Puerto Rico," *General Meeting of the IEEE Power Engineering Society*, July 2009, Calgary, Canada.

E. O'Neill-Carrillo, A.A. Irizarry-Rivera, C. Pomales, "Integrative Graduate Program in Sustainable Electric Energy Systems," *General Meeting of the IEEE Power Engineering Society*, July 2009, Calgary, Canada.

Diaz, Andrés J.; Saltares, Roger; Rodríguez, Christian; Nuñez, Roberto; Ortiz-Rivera, Eduardo I.; Gonzalez, Jesús; "Induction Motor Equivalent Circuit for Dynamic Simulation" *IEEE International Machines and Drives Conference*, Miami, FL, May 3-6, 2009

E. E. Jimenez-Toribio, A. A. Labour-Castro, F. Muniz-Rodriguez, H. R. Perez-Hernandez, and E. I. Ortiz-Rivera; "Sensorless Control of SEPIC and Cuk Converters for DC Motors using Solar Panels" *IEEE International Machines and Drives Conference*, May 3-6, 2009

Gonzalez-Llorente, Jesús; Ortiz-Rivera, Eduardo I.; Diaz, Andrés J.; "A Maximum Power Point Tracker using Positive Feedforward Control based on the DC Motor Dynamics and PVM Mathematical Model" *IEEE International Machines and Drives Conference*, May 3-6, 2009

E. O'Neill-Carrillo, A. Irizarry-Rivera, J. Colucci-Rios, "Struggling for Sustainability in a Fossil Fuel Dependent Society," *Journal on Electrical Engineering*, vol. 2, no. 4, April-June 2009, pp. 44-56.

L. Collazo, E. O'Neill-Carrillo, "Comparison of Windowed Fourier Transform and Dynamic Phasors for Power Quality Analysis," *Proceedings of the IEEE/PES Power Systems Conference and Exposition*, March 2009, Seattle, WA.

E. O'Neill Carrillo, J. A. Colucci Ríos, A. Irizarry Rivera, W. J. Frey "La Sostenibilidad Energética y la Ética: Procesos Globales y Alternativas Locales," ETHOS, Vol. VI, Revista del Centro para el Desarrollo del Pensamiento Ético, Oficina de Ética Gubernamental de Puerto Rico, 2008-2009.

E. O'Neill-Carrillo, M. Pérez-Lugo, C. Ortiz-García, A. A. Irizarry-Rivera, J.A. Colucci-Ríos, "Sustainable Energy: Balancing the Economic, Environmental and Social Dimensions of Energy," *Proceedings of Energy 2030: IEEE Conference on Global Sustainable Energy Infrastructure*, November 2008, Atlanta, GA.

E. O'Neill-Carrillo, W. Frey, C. Ortiz-García, A. A. Irizarry-Rivera, M. Pérez-Lugo, J.A. Colucci-Rios, "Advancing a Sustainable Energy Ethics Through Stakeholder Engagement," *Proceedings of Energy 2030: IEEE Conference on Global Sustainable Energy Infrastructure*, November 2008, Atlanta, GA.

M. Rodríguez-Otero, E. O'Neill-Carrillo, "Efficient Home Appliances for a Future DC Residence," *Proceedings of Energy 2030: IEEE Conference on Global Sustainable Energy Infrastructure*, November 2008, Atlanta, GA.

W. Frey, E. O'Neill-Carrillo, "Engineering Ethics in Puerto Rico: Issues and Narratives," *Journal for Science and Engineering Ethics*, vol. 14, no. 3, 2008, pp. 417-431.

Jimenez-Brea, Emil A.; Ortiz-Rivera, Eduardo I.; Gil-Arias, Omar; "A Dynamic Maximum Power Point Tracker using Sliding Mode Control" *11th IEEE Control and Modeling for Power Electronics (COMPEL)*, Zurich, Switzerland, Aug 18-20, 2008

Gil-Arias, Omar; Ortiz-Rivera, Eduardo I.; "A General-Purpose Tool for Simulating the Behavior of PV Solar Cells, Modules and Arrays" *11th IEEE Control and Modeling for Power Electronics (COMPEL)*, Zurich, Switzerland, August 18-20, 2008

E. O'Neill-Carrillo, "Power Quality Research and Education: A New Power Engineer for Today's Energy Challenges," Invited Panel Paper, *General Meeting of the IEEE Power Engineering Society*, July 2008, Pittsburgh, PA.

Ortiz-Rivera, Eduardo I.; Pan, Zach; Wang, Jin; "A Mathematical Model to Describe the Electrical Characteristics for a Fuel Cell" IEEE 39th Power Electronics Specialists Conference, Rhodes, Greece, June 15-19 2008

Jimenez-Brea, Emil A.; Ortiz-Rivera, Eduardo I.; "Sliding Mode Control for PV Power Systems" Proceedings CPES General Meeting 2008, Blacksburg, Virginia, April 6-9, 2008

H. Ladner, E. O'Neill-Carrillo, "Demonstrative PV Systems for an Isolated System," *Proceedings of the 10th IASTED International Conference on Power and Energy Systems*, April 2008, Baltimore, MD.

E. O'Neill-Carrillo, M. Pérez-Lugo, C. Ortiz-García, A. Irizarry-Rivera, J. Colucci-Ríos, "Sustainability, Energy Policy and Ethics in Puerto Rico," *Proceedings of Energy and Responsibility: A Conference on Ethics and the Environment*, April 10-12, 2008, Knoxville, TN.

Ortiz-Rivera, Eduardo I.; "Maximum Power Point Tracking using the Optimal Duty Ratio for DC-DC Converters and Load Matching in Photovoltaic Applications" *22nd IEEE Applied Power Electronics Conference and Exposition*, Austin, Texas, February 24-28, 2008

Ortiz-Rivera, Eduardo I.; Rodriguez, Luis; "The Z-Source Converter as an Introduction to Power Electronics and Undergraduate Research" *Proceedings 2007 Frontiers in Education Conference*, Milwaukee, WI, October, 10-13, 2007

Ortiz-Rivera, Eduardo I.; Reyes-Hernandez, Angel L.; Febo, Rey A.; "Understanding the History of Fuel Cells" *Proceedings 2007 IEEE Conference on the History of Electric Power*, New Brunswick, New Jersey, August 3-5, 2007

Ortiz-Rivera, Eduardo I.; "A MPPT Method Based on the Approximation of a PVM Model using Fractional Polynomials" *38th IEEE Power Electronics Spec. Conf.*, Orlando FL, June 18-22, 2007.

J. Colucci, A. Irizarry, E. O'Neill-Carrillo "Sustainable Energy in Puerto Rico," *ASME Sustainability '07 Conference*, June 2007, Long Beach, CA.

Arias, Omar G.; Ortiz-Rivera, Eduardo I.; "Emulation of the Behavior of a Photovoltaic Module in SABER" *Proc. CPES General Meeting 2007*, Blacksburg, Virginia, April 15, 2007

Rodriguez, Luis; Lugo, Salvador; Ortiz-Rivera, Eduardo I.; "Undergraduate Research: Introduction to Power Electronics Using The T-Filter and Z-Source Converter" *Proceedings CPES General Meeting 2007*, Blacksburg, Virginia, April 15, 2007

A. A. Irizarry-Rivera, M. Rodríguez-Martínez, B. Vélez, M. Vélez-Reyes, A. Ramirez-Orquin, E. O'Neill-Carrillo and J. Cedeño "Intelligent Power Routers: A Distributed Coordination Approach for Electric Energy Processing Networks," *International Journal of Critical Infrastructures*, Special Issue, Vol. 3 No 1/2 pp. 20-57, 2007.

ATTACHMENT 3: SELECTED GRADUATE THESES FROM THE LAST TEN YEARS (IN REVERSE CHRONOLOGICAL ORDER)
http://grad.uprm.edu/oeg/TesisDisertacionesDigitales/IngenieriaElectricaComputadoras/

Jordán, Isaac. 2017. Towards a Zero Net Energy Community Microgrid.

López, Naysy. 2017. Voltage Regulation and Reactive Power Services from Rooftop Photovoltaic Systems for Distributed Generation Rates.

López-Santiago, Victor G. 2016 Magnetic Generator Development for Automotive Energy Recovery.

Darbali-Zamora, Rachid. 2016. Design, Development and Testing of a SEPIC and Buck Converter Based Electronic Power Supply with MPPT and Voltage Regulation for CubeSat Applications.

Matagira-Sánchez, José R. 2016. Economic Feasibility Study of Micro Pumped Hydro and Battery Energy Storage for the Integration of Solar Photovoltaic Energy into the Grid.

Malavé-Pérez, Luis A. 2015. Design of Single-Inductor Multiple-Output Converter for Low Power & High Efficiency Applications.

Perea, Jorge. 2015. On the Security of Smart Grid Communications: Vulnerabilities and Countermeasures.

Berríos-Galarza, Edwin. 2013. Método de detección de aislamiento como apoyo a la generación distribuida.

Figueroa-Acevedo, Armando L. 2013. Power System Operational Reserves Requirements with Significant Renewable Generation in Puerto Rico.

Hernández Maduro, Felipe A. 2012. Feasibility Study of a Dish/Stirling Solar Thermal Power Plant in the Dominican Republic and Puerto Rico.

Labour-Castro, Abel A. 2012. Implementación de nuevo método de rastreo del punto de máxima potencia en paneles fotovoltaicos para el funcionamiento de radares meteorológicos sin conexión a la red eléctrica.

Méndez-Delgado, Edgardo J. 2012. Monolithic Integrated Solar Energy Harvesting System.

Bousoño-Zavala, Orlando. 2011. Multivariable Model Predictive Control for Optimal Operation of a Fluid Catalytic Cracking Debutanizer Distillation Column.

Irizarry-Silvestrini, Miguel F. 2011. Evaluation of Photovoltaic Distributed Generation on the Voltage Profile of Distribution Feeders.

Miranda-Ramírez, Alexis J. 2011. Economic Impact of Adopting an RPS in Puerto Rico: Case Studies and Policy Recommendations.

Salazar-Llinas, Andres C. 2011. Analysis and FPGA Implementation of Dynamical Maximum Power Point Tracking Methods for Photovoltaic-Fuel Cell Hybrid System.

Vélez-Sepúlveda, Tomás E. 2011. Economic Evaluation of Feeder Automation in a Distribution System.

Feliciano-Cruz, Luisa I. 2010. Performance Evaluation and Simulation of a Compound Parabolic Concentrator (CPC) Trough Solar Thermal Power Plant in Puerto Rico Under Solar Transient Conditions.

Guzmán-Rivera, Oscar R. 2010. Industrial Power Distribution System Reliability Assessment utilizing Markov Approach.

Henao-Bravo, Elkin E. 2010. Diseño de un Esquema de Control para Extracción de Máxima Potencia en un Sistema Turbina-Generador Eólico de Baja Potencia.

Rivera-Torres, Caroline. 2010. Procedures for Interconnection Studies of Solar and Wind Generation Projects.

Valdivia-García, Harold D. 2010. Empirical Cost Models for Estimating Power and Energy Consumption in Database Servers.

Zamot-Ayala, Héctor R. 2010. Viabilidad de la independencia de la red en áreas residenciales de Puerto Rico.

Aponte-Santiago, Franchesca M. 2009. Feasibility of Ocean Wave Energy into Electricity Using Attenuators Energy Devices in the North Coast of Puerto Rico.

Galarza-Torres, Damián. 2009. Stability Optimization Installing Distributed Generation in the Electrical System of Puerto Rico.

García-Elivo, Juan E. 2009. Inversor monofásico para un sistema de distribución CC.

González-Llorente, Jesús D. 2009. Analysis of Optimal Matching Between a Dc Motor and Photovoltaic Modules Via Dc-Dc Power Converters.

Jimenez-Brea, Emil A. 2009. Control of Alternative Energy Hybrid System for Residential and Low Power Applications.

Jiménez Toribio, Edy E. 2009. Impact of Distributed Generation on Unbalanced Power Systems.

Ladner-García, Hillmon P. 2009. Photovoltaic Based Distributed Generation as a Demand Response Strategy in Puerto Rico.

Martínez-Cid, René B. 2009. Renewable-Driven Microgrids in Insolated Communities.

Quintero-Lopez, Magaby. 2009. Feasibility of Ocean Wave Energy into Electricity Using Oscillating Water Column in Puerto Rico.

Gil-Arias, Omar. 2008. Modelado y simulación de dispositivos fotovoltaicos.

Giraldo-Castañeda, Carlos A. 2008. Maximum Power Point Tracking Using Modified P&O Method for the Off-Grid Radar.

Lozada-Ortiz, Pablo. 2008. Design and Characterization of Log Periodic Rectangular Slot

Ríos-Rivera, Miguel. 2008. Small Wind / Photovoltaic Hybrid Renewable Energy System Optimization.

Macias-Ferro, Hugo A. 2007. Desarrollo e implementación de un convertidor CC-CC Bidireccional de doble puente activo.

Sánchez-Saavedra, Víctor J. 2007. Modulación, modelación y control para un convertidor de potencia bidireccional aislado.

Torres-Hernández, María E. 2007. Hierarchical Control of Hybrid Power Systems.

ATTACHMENT 4: RELEVANT PROJECTS IN THE LAST TEN YEARS (IN REVERSE CHRONOLOGICAL ORDER)

"Consortium for Integrating Energy Systems in Engineering and Science Education (CIESESE)," U.S. Department of Energy and NNSA, October 2016 – September 2019.

"Interdependent Electric and Cloud Services for Sustainable, Reliable, and Open Smart Grids," National Science Foundation ACI Grant, October 2015 – September 2018.

"Transformational Initiative for Graduate Education and Research (TIGER)," U.S. Department of Education, August 2014 – July 2019.

"Cultivating Responsible Wellbeing in STEM: Social Engagement through Personal Ethics," National Science Foundation Grant, September 2014 – August 2019.

"Leveraging Industry Research to Educate a Future Electric Grid Workforce," GEARED program, a SunShot Initiative, U.S. Department of Energy. October 2013 – September 2018.

"Energy Efficiency Projects," Bayamón City Government Grant, 2015-2016.

"Development Advanced Unmanned Aerial Vehicle with VTOL Capabilities for Commercial Civil Markets," Fideicomiso de Ciencias y Tecnología de Puerto Rico, April 2015 – March 2016.

"UPRM's Center for Aerospace and Unmanned Systems Engineering (CAUSE)," UPR System Grant, January 2015.

"Streamlined and standardized permitting and interconnection processes for Rooftop PV in Puerto Rico," Rooftop Solar Challenge, U.S. Department of Energy, Feb. 2012 – Feb. 2013.

"A Nationwide Consortium of Universities to Revitalize Electric Power Engineering Education by State-of-the-Art Laboratories," U.S. Department of Energy, August 2010 – July 2013.

"Distributed Power Generation Technologies for a High Resilience Electric Power Grid on Puerto Rico," U.S-Department of Homeland Security, August 2011 – July 2012.

"Diseño de una Mención en Energía Renovable dentro del grado de Ingeniería Eléctrica," Grant from the University of APEC, Santo Domingo, Dominican Republic, Aug.-Nov. 2011.

"Pan-American Training Program in Power Engineering," Joint project between UPRM and the APEC University (Santo Domingo, DR), January 2007-May 2011.

"Faculty and Students Team: Study of Power Markets at Argonne National Laboratory," National Science Foundation-LSAMP and U.S. Department of Energy FaST Program, May 2007 - July 2010

"Distributed Power Generation Technologies for a More Resilient LA/LG Port," U.S. Department of Homeland Security, May 2010 – August 2010.

"Sustainable Energy Projects for Bayamón's Sustainability Master Plan," Bayamón City Government Grant, 2009-2010.

"Power Quality Research and Education: A New Power Engineer for Today's Energy Challenges," National Science Foundation ECS CAREER Program Grant, May 2002-April 2008.

"Development of algorithms for load matching of PVM with integrated converters," ERC-NSF Center of Power Electronics Systems (CPES), 2008

"Achievable Renewable Energy Targets for Puerto Rico's Renewable Energy Portfolio Standard," Puerto Rico's Energy Affairs Administration, Oct. 2007- Nov. 2008

"Caguas Sustainable Energy Showcase," Caguas City Government Grant, September 2006-February 2007.